

AMENDMENTS TO THE CLAIMS

The claims in this listing replaces all prior versions and listings of claims in the application.

Listing of Claims:

1 (currently amended). A variable-frequency inverter microwave oven, comprising:

a magnetron ~~for generating that generates~~ electromagnetic waves;

~~a~~ direct current (DC) voltage ~~generation means for rectifying and smoothing generator~~ that rectifies and smooths a commercial alternating current (AC) voltage to generate a DC voltage, ~~said the~~ commercial AC voltage being an inverter drive voltage;

~~a switcher that performs switching means for performing~~ a switching operation based on said DC voltage from said DC voltage ~~generation means generator~~ to generate an AC voltage ~~for the driving of that drives~~ said magnetron, said ~~switching means switcher~~ including a plurality of switches that are turned on/off in response to said DC voltage from said DC voltage ~~generation means generator~~;

~~a~~ variable-frequency ~~control means for varying controller that controls~~ a switching frequency of said ~~switching means switcher~~ according to a level of said DC voltage from said DC voltage ~~generation means generator~~ to maintain said AC voltage from said ~~switching means switcher~~ at a constant level; and

a magnetron drive voltage ~~generation means for converting~~ generator that converts said AC voltage from said ~~switching means~~ switcher into a high-power DC voltage and ~~transferring the~~ transfers said converted DC voltage to said magnetron to drive it said magnetron, said variable-frequency controller comprising:

a DC voltage input node that receives said generated DC voltage;

a current source that supplies a switching current for the switching operation of said switcher, based on said DC voltage inputted to said DC voltage input node; and

a frequency generator that generates a predetermined frequency in accordance with an amount of said switching current supplied from said current source and outputs said predetermined frequency to said switcher.

2 (currently amended). The variable-frequency inverter microwave oven ~~of as set forth in claim 1~~, further comprising a drive current ~~sensing means for sensing~~ sensor that senses a current amount of ~~said the~~ commercial AC voltage.

3 (currently amended). The variable-frequency inverter microwave oven ~~of as set forth in claim 2~~, further comprising a microcomputer ~~for controlling~~ that controls an output power of ~~said the~~ microwave oven in response to a user's cooking command and ~~on the basis of the~~ and a current amount sensed by said drive current ~~sensing means~~ sensor.

4 (currently amended). The variable-frequency inverter microwave oven ~~of as set forth in claim 1~~, further comprising ~~protection means for, if the level of said DC voltage from said DC voltage generation means is higher than or equal to a predetermined threshold voltage level, turning a protector that turns off said switching means switcher to prevent said switches thereof from being damaged when a level of said DC voltage from said DC voltage generator is at least equal to a predetermined threshold voltage level.~~

5 (canceled).

6 (currently amended). The variable-frequency inverter microwave oven ~~of as set forth in claim [[5]] 1~~, wherein said variable-frequency ~~control means~~ controller further includes a transistor having ~~[[its]]~~ a base connected to said current source and ~~[[its]]~~ a collector connected to said ~~integrated circuit~~ frequency generator.

7 (currently amended). The variable-frequency inverter microwave oven ~~as set forth in of claim [[5]] 1~~, wherein said ~~integrated circuit~~ frequency generator is adapted to lower said switching frequency of said ~~switching means if switcher when~~ the amount of said switching current supplied from said current source is below a predetermined reference value, and to raise said switching frequency of said ~~switching means if switcher when~~ said switching current amount is above said predetermined reference value.

8 - 10 (canceled).

11 (new). The variable-frequency inverter microwave oven of claim 1, wherein said frequency generator comprises an integrated circuit.

12 (new). A variable-frequency inverter microwave oven, comprising:

a switcher having a plurality of switches that are turned on/off to perform a switching operation to generate an AC voltage;

a variable-frequency controller that controls a switching frequency of the switcher to maintain the AC voltage from the switcher at a constant level; and

a magnetron drive voltage generator that converts said AC voltage from said switcher into a high-power DC voltage to drive a magnetron of the microwave oven, said variable-frequency controller comprising:

a DC voltage input node that receives a DC voltage;

a current source that supplies a switching current for the switching operation of said switcher, based on the DC voltage inputted to said DC voltage input node; and

a frequency generator that generates a predetermined frequency in accordance with an amount of said switching current supplied from said current source and outputs said predetermined frequency to said switcher.

13 (new). The variable-frequency inverter microwave oven of claim 12, wherein said switcher performs the switching operation in accordance with a level of a generated DC voltage.

14 (new). The variable-frequency inverter microwave oven of claim 12, further comprising a protector that turns off said switcher to protect said switches from damage when a DC voltage level is at least equal to a predetermined threshold voltage level.

15 (new). The variable-frequency inverter microwave oven claim 12, wherein said frequency generator is adapted to lower said switching frequency of said switcher when the amount of said switching current supplied from said current source is below a predetermined reference value, and to raise said switching frequency of said switcher when said switching current amount is above said predetermined reference value.

16 (new). The variable-frequency inverter microwave oven of claim 12, wherein said frequency generator comprises an integrated circuit.

17 (new). A variable-frequency inverter for a microwave oven, comprising:
a switcher having a plurality of switches that are turned on/off to perform a switching operation to generate an AC voltage; and

a variable-frequency controller that controls a switching frequency of the switcher,
said variable-frequency controller comprising:

a DC voltage input node that receives a DC voltage;

a current source that supplies a switching current for the switching operation of
said switcher, based on the DC voltage inputted to said DC voltage input node; and

a frequency generator that generates a predetermined frequency in accordance
with an amount of said switching current supplied from said current source and outputs said
predetermined frequency to said switcher.

18 (new). The variable-frequency inverter microwave oven claim 17, wherein said
frequency generator is adapted to lower said switching frequency of said switcher when the
amount of said switching current supplied from said current source is below a predetermined
reference value, and to raise said switching frequency of said switcher when said switching
current amount is above said predetermined reference value.

19 (new). The variable-frequency inverter microwave oven of claim 17, further
comprising a protector that turns off said switcher to protect said switches from damage
when a DC voltage level is at least equal to a predetermined threshold voltage level.